

**BEAUMONT INDEPENDENT SCHOOL DISTRICT**  
 Integrated Physics and Chemistry Overview  
 2021-2022

<b>NINE WEEKS 1</b>	<b>NINE WEEKS 2</b>	<b>NINE WEEKS 3</b>	<b>NINE WEEKS 4</b>
<u>Introduction to Matter</u> Safety Data and Analyzing Data Measurement Significant Digits Scientific Notation Dimensional Analysis  <u>Properties of Matter</u> Graphing and Variables States of Matter Particle Motion Physical Properties <b>*CALCULATE DENSITY</b> Fluids Gas Laws Archimedes & Bernoulli  <b><u>*ATOMS AND ELEMENTS</u></b> Pure substances Make up of atoms Periodic table Periodicity Valence electrons  <b><u>*MOLECULES/COMPOUNDS</u></b> Chemical Bonds Chemical formulas Oxidation number	<u>Chemical Reactions</u> <b>* REACTANTS/PRODUCTS</b> <b>* EQUATIONS</b> <b>* REACTION INDICATORS</b> Conservation of Mass (balancing equations) Types of Reactions Energy transfer  <u>Nuclear Reactions</u> Types of Nuclear Reactions Radioactive decay Nuclear Energy Pros & Cons of Nuclear Reactions  <u>Solutions, Acids &amp; Bases</u> Polar/Non-polar molecules Solubility Mixtures & Properties Temperature/Solubility Graph Acids & Bases pH	<b><u>*POSITION, SPEED AND ACCELERATION RELATIONSHIP</u></b> <b>DISTANCE/TIME GRAPHS</b> <b>SPEED/TIME GRAPHS</b>  <b><u>*NEWTON'S LAWS</u></b> <b>FORCES – BALANCED/ UNBALANCED LAWS</b> <b>INERTIA</b> <b>ACTION - REACTION FORCE VS. WEIGHT</b> Law of Conservation of Momentum  <b><u>*ENERGY</u></b> <b>POTENTIAL – KINETIC TRANSFORMATIONS</b> Law of Conservation of Energy Energy Transformations  <u>WORK &amp; POWER</u> Calculating Simple Machines Classification of Levers Input/Output Efficiency	<u>Heat Energy</u> <b>*HEAT TRANSFER TYPES RELATE TO WEATHER &amp; CURRENTS</b> Temperature/Heat Thermal energy Specific Heat-Calories Equilibrium Insulators/Conductors  <u>Electricity &amp; Magnetism</u> Electricity Circuits Parallel vs. Series Like and unlike charges Properties of magnets  <u>Waves and Sound</u> Types of waves Properties of waves Harmonic motion  <u>Light &amp; Optics</u> <b>*ELECTROMAGNETIC SPECTRUM</b> Properties of light Optical devices Vision

**\*ITEMS MARKED WITH AN ASTERISK, BOLDED AND ALL CAPPED ARE ITEMS THAT ARE ON THE 8<sup>TH</sup> GRADE STAAR.**